

# PAPILIO.

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## NEW GENERA AND SPECIES OF THE FAMILY ÆGERIDÆ.

BY HENRY EDWARDS.

The study of this difficult and little known group has for some time past engaged my attention, and the kindness of many friends throughout the United States, whose generosity shall be hereafter fully acknowledged, has enabled me to become acquainted with a number of new forms. In the course of a few months I hope to be enabled to publish a monograph of the North American species, with colored figures, the difficulty and delay arising from the drawing of the plates presenting the only obstacle to its immediate production.

In the present paper I have described all the species coming into my hands which appear to me to be new to science. I shall be extremely grateful for corrections of any errors of which I may have been guilty, it being hardly possible for me to escape the commission of a few. Through the kindness of Mr. A. G. Butler, of the British Museum, I have obtained admirable colored drawings of Walker's types, the descriptions of which I have copied and added to the present paper. A plate of these species is now being prepared by Messrs. Mintern Bros., London, and will be given (if possible) with the December number of "PAPILIO."

I here repeat, what I have more than once said, that I shall be deeply indebted for the loan of any species of Ægeridæ, more especially from the southern, western and extreme northern portions of the continent. These shall be carefully preserved and returned as early as possible.

I have scarcely thought it desirable, in the present paper, to

give the diagnoses of the genera proposed by previous authors, as these will appear in their proper places in the more extended work.

✓ TROCHILIUM PACIFICUM. n. sp.

Size and aspect of *T. apiforme*, L. The forewings have a blackish space at the base, and the borders and nervures of both wings are orange brown, the same color as in the European species. Antennæ, rich brown, paler at the apex. Head, with the front brown, orbits of the eyes and tibiæ pale lemon yellow. Palpi pale yellow. Fore femora and tibiæ pale yellow, bordered inwardly with black. Hind tibiæ and tarsi wholly yellow. Thorax brown on the disk, with two stripes of yellow, broadest at the base, and the tegulæ edged broadly in front with yellow. There is also a yellow spot at the base of the wings, leaving the tegulæ themselves brown. At the junction of the thorax and abdomen are some black hairs, edged with yellow. The abdomen is wholly blackish brown. Of the seven visible segments, the first is without a band, the second has a very narrow golden yellow band in front, the third a broad yellow band in front, sinuously notched in the middle, leaving the centre narrower than the sides, the fourth segment is without a band, the fifth, sixth and seventh are wholly golden yellow, with a waved mark of brownish posteriorly on the fifth and sixth. The anal segment is very long and tapering. Sides of all the segments marked with golden yellow. Underside of abdomen golden yellow for the last five segments.

1 ♂. Washington Ter. (Morrison), 1 ♀. California, (R. H. Stretch).

Types. Coll. B. Neumoegen. J. Akhurst.

The dark tegulæ and the sinuous mark on the third abdominal segment will serve to distinguish this species from *T. apiforme* L. of which it appears to be the Pacific Coast representative.

EUHAGENA. n. gen.

In many respects this genus is similar to *Tarsa* of Walker, but it differs by the proboscis being short, instead of long, by the antennæ being much longer than the thorax, and by the fore and hind wings being opaque. It may be thus characterized: Body short at base, tapering posteriorly, with long anal tuft. Proboscis short. Palpi densely clothed with long hairs, and nearly straight. Antennæ twice the length of the thorax, very deeply pectinated, except at the tip, where the pectinations seem soldered together into a compact mass. Legs long. Tibiæ with long hairs, not so long, however, as in either *Melittia* or *Larunda*. Tarsi naked. Wings all opaque, the hind nearly double the width of the fore pair.

I have dedicated this singular genus to my good friend, Dr. Herman Hagen, of Cambridge, one of the most distinguished of living entomologists, and one to whom I am under special obligations.

## ✓ EUHAGENA NEBRASKÆ. n. sp.

Antennæ, thorax and abdomen deep velvety black. Thorax with white scales at the sides. Abdomen with the posterior edges of the segments with clear white bands, extending in nearly all the segments entirely around. Anal tuft with white scales. Tibiæ black at their base, the hind pair with long whitish hairs intermixed. Tarsi, unclothed, black, with minute white scales. Forewings rich dark orange, black at the base, along the costa, and narrowly so on the internal margin. Discal mark large, black, triangular. Fringes long, blackish brown. Hind wings, also, rich dark orange, the abdominal margin broadly black, and the ovate discal spot, also black. The course of the nervules in both wings is indicated by black scales. Fringe broad, blackish brown.

Exp. wings. 32 m.m.

1 ♂. Nebraska. (Mr. Austin).

Type. Coll. Cambridge Museum.

A very remarkable form, differing greatly from any other with which I am acquainted

## ✓ BEMBECEIA SEQUOIÆ. n. sp.

♂. Forewings with the margins all black, the costal rather broad. Hind wings with costal margin, and base of the abdominal pale yellow. Beneath, the forewings have the margins lemon yellow, as far as the discal mark, beyond this, black. Hind wings as on the upper side. Head and antennæ jet black. Palpi lemon yellow, black at the sides. Fore femora, orbits of eyes and base of wings beneath lemon yellow. Middle and hind femora black. Tibiæ, lemon yellow, bordered with black. Thorax with collar, tegulæ, two narrow dorsal lines, and a basal line, lemon yellow. Abdomen with all the segments, except the fourth, narrowly bordered with rich lemon yellow. Caudal tuft, yellow below, blackish above.

♀. Similar to the ♂, but a little larger and more robust, the abdominal band broader and better defined.

Exp. wings ♂. 24 m.m. ♀. 30 m.m.

8 ♂. 6 ♀. Mendocino Co., Calif. (O. Baron).

Very destructive to *Sequoia sempervirens*, as well as to some species of *Pinus*.

BEMBECEIA SUPERBA. n. sp. = *Sequoia*

✓ Nearly allied to *B. sequoiæ*, but more delicate than that species. Fore wings with costal margin brownish black, the internal margin and discal mark flecked with golden scales. The base and abdominal margin of hind wings are golden yellow. Beneath, with the exception of the margin of hind wings, and the posterior margin of fore wings, which are brown, the whole of the wings are golden yellow. Head and antennæ black, the latter with yellow hairs at the base. Thorax with collar and rather broad lateral and basal bands golden yellow. Abdomen black, with second segment posteriorly, and fourth, fifth and sixth

wholly golden yellow, the color extending to the under side. Caudal tuft golden yellow, blackish in the centre above. Palpi golden yellow, with some black hairs at the sides. Fore coxæ golden yellow without, blackish within. Other coxæ and femora blackish. Tibiæ and tarsi golden yellow, the former marked with black at the joints above.

Exp. wings. 30 m.m.

1 ♀. Washington Terr. (Morrison).

Type. Coll. E. L. Graef.

This may be distinguished from *B. sequoiæ* by its slighter structure, narrower body, golden scales on fore wings, and by the posterior segments of abdomen being wholly yellow and not banded.

LARUNDA. n. gen. *larunda*

Antennæ moderately pectinated in the ♂, almost simple in the ♀. Palpi. short, with very broad spreading tuft of hairs. Tongue almost obsolete. Abdomen very long, sessile, as wide at the base as the thorax. Caudal tuft large, flat, spreading. Hind tibiæ clothed with bunches of long hairs, especially in the ♀. Forewings opaque. Hind pair with small vitreous spot at base.

"Larunda, daughter of Almon, was the nymph who informed Juno of the connection between Jupiter and Juturna. For this Jupiter deprived her of her tongue, and ordered Mercury to conduct her to the lower world. On the way thither Mercury fell in love with her, and she afterward gave birth to 2 Lares." (*Smith's Classical Dict.*, page 234.)

✓ LARUNDA SOLITUDA. n. sp.

♂. Head and thorax brownish, collar, small tuft between the eyes, and fore tarsi pale dull yellow. Antennæ dull brown at the base and apex, deep orange in the middle. Hind tibiæ pale yellow, with bunch of orange hairs, which are brownish above. These hairs are very much shorter than those of the genus *Mellittia*, but are, nevertheless, quite apparent. Forewings quite opaque, dark brown, with a red and yellow shade from base along internal margin, and a streak of same colors in the cell, reaching almost to the apex, but interrupted by the discal mark. Hind wings, vitreous in the spaces between the subcostal and median nerve, and between the median and submedian, the vitreous space terminating before the centre of the wings. Margins, broadly orange red, mixed with brownish scales. Fringes of both wings, olive brown. Abdomen brownish black, with 6 broad pale orange bands, the 1st, 3rd and 5th being narrower than the rest. The 4th is broadest of all, and is carried on beneath the abdomen. Caudal tuft black, yellow in centre. ♀ Similar to the ♂, with band of abdomen, a little narrower and less distinct.

Exp. wings. ♂. 28 m.m. ♀. 32 m.m.

♂. ♀. Texas (J. Boll.) (Coll. B. Neumoegen. ♀. Kansas (H. Brous.) Coll. C. V. Riley.)



✓ *SCIAPTERON GRAEFL.* n. sp.

Entire insect purplish black, with very bright metallic reflection. Antennæ and palpi dull black. There are no traces of bands on the abdomen, and the legs are wholly concolorous with the rest of the body. I know of no other species with similar coloration.

Exp. wings. 29 m.m.

1 ♂. 2 ♀. Nevada (Morrison.)

Type. Coll. E. L. Graef, from whom I have received many courtesies, and to whom I dedicate this singular species.

✓ *SCIAPTERON SCEPSIFORMIS.* n. sp.

Allied to *S. syringæ* Harris, but with the legs much shorter. The forewings are rich golden brown, a little reddish at the base and on the disk. The hind wings are very opalescent, with a rather broad purplish brown margin, the opaque portion being carried a considerable distance along the course of the median and sub-median veins. Discal mark prominent and broad, enclosing an oval vitreous space, crossed by two veins. Abdominal margin brownish orange. The wings beneath are the same as above, except that the costal margin of forewings is yellowish. Antennæ purplish brown, dark orange at the base and at the tip. Palpi and vertex dark orange. Femora dark brown. Tibiæ and tarsi orange, banded with brown. Thorax with very narrow stripes on the sides and broader ones at base, pale yellow. Abdomen brown, with 2nd segment narrowly bordered behind with pale yellow. Anal segments with yellowish shade. Caudal tuft small, as in all the genus, pale brown.

Exp. wings ♂. 25 m.m. ♀ 29 m.m.

1 ♂. 1 ♀. Texas. (J. Boll.)

Type. Coll. B. Neumoegen.

✓ *SCIAPTERON CUPRESSI.* n. sp.

Allied to *Sciap. Robiniaæ*, Hy. Edw., but having the fore wings pale yellow at the base, and purplish brown along the costal margin, not concolorous as in *S. Robiniaæ*. The hind wings have the abdominal margins and the base rather broadly golden yellow, the fringes of both wings being golden brown. Beneath, the forewings, as well as the margins of the hind pair, are golden yellow. Antennæ, vertex, and palpi, deep orange. Base of the eyes, pale yellow. All the tibiæ and tarsi, orange, blackish at the joints, and stained in the middle with a deeper shade. Thorax brown, with narrow lateral yellow streaks, and a broader one at the base. Abdomen with basal segment black, the second deep orange, edged posteriorly with pale yellow, the third orange in front, shading into paler yellow behind. All the other segments are deep yellow. Beneath, the abdomen has five pale yellow bands. Caudal tuft, dull orange.

Exp. wings. 30 m.m.

1 ♂. Colorado. (I. Doll.)

Type. Coll. B. Neumoegen.

The chief differences to be found between this and *Sc. Robiniae* are: the markings of the fore wings, the much darker tibiae and tarsi, stained with a deeper shade, and the almost wholly yellow abdomen, which in *S. Robiniae* is blackish for the first three segments, with a narrow yellow line.

✓ SCIAPTERON SYRINGÆ. Harr. Larva.

Yellowish white. Head about two-thirds the width of second segment, chestnut brown, with the mouth parts pitchy above, whitish beneath, very shiny, and with a deep triangular sulcus in front. Second segment yellowish, with a waved brownish line posteriorly. Each of the segments bears about eight short brownish hairs. The third segment is slightly broader than the rest, swollen as it were, at the sides. The spiracles are small, brown, those of the second and twelfth segment being larger than the rest. The anal segment is slightly yellow, with many short brownish hairs. All the feet and legs pale pitchy.

Length. 0.80 inch.

In stems of *Syringa Persica*. Albany, N. Y. Dr. James S. Bailey.

In young shoots of *Fraxinus* sp. Long Island. Rev. G. D. Hulst.

In young shoots of *Fraxinus* sp. Ames, Iowa. Herbert Osborn.

CARMENTA. n. gen.

Fore wings quite opaque. Abdomen sessile, and tapering toward anal extremity. Caudal tuft small. Antennæ thickened toward the extremity, as in *Ægeria* proper. In many respects this genus approaches *Paranthrene*, but in that genus, while the anterior wings are opaque, the antennæ are simple, or ciliate.

Type. *Ægeria Pyralidiformis*. Walker.

"Carmenta was the most important of the Camenæ, the prophetic nymphs belonging to the religion of ancient Italy. The traditions which assigned a Greek origin to her worship state that her original name was Nicostrate, and that she was the mother of Evander, with whom she came to Italy."

*Smith's Class. Dict.* Art. Camenæ.

CARMENTA RUFICORNIS. n. sp.

✓ Fore wings bright golden purple, the golden shades arranged in streaks. Margins of hind wings also flecked with gold. Beneath, the fore wings have the costal edge bright yellow. Antennæ bright brownish orange above, with the tip black. Beneath they are brownish black. Thorax with narrow lateral and basal yellow lines, and with some pale blue metallic scales at base. Abdomen with second and fourth segments narrowly edged posteriorly with pale yellow, the sixth wholly yellow. Between the

bands are a few pale blue metallic scales. Caudal tuft black, with the centre beneath yellow. Palpi golden yellow. Coxæ, femoræ, and basal half of tibiæ steel black, the rest of the legs golden yellow, banded with black. The yellow of the legs is of a deeper shade than that of the abdominal band.

Exp. wings. 14 m.m.

1 ♂. Georgia. (Morrison.)

Type. Coll. E. L. Graef.

The reddish orange antennæ, and the blue metallic scales, will serve to distinguish this pretty species from its nearest allies, *C. Pyralidiformis*, Wlk., and *C. Aureopurpurea*, Hy. Ed.

CARMENTA MINUTA. n. sp.

✓ Allied to *C. Pyralidiformis*, Wlk., but differing greatly in size, as well as in other characters. The fore wings are purplish, with a golden reflection. The fringes of both wings are brown. Antennæ black above, yellowish below. Collar pale yellow. Abdomen with third, fifth and seventh segments narrowly edged with pale yellow. Caudal tuft wholly black. Palpi blackish above, golden yellow beneath. Tibiæ and tarsi golden yellow, regularly banded with black.

Exp. wings. 8 m.m.

1 ♂. Georgia. (Morrison.)

Type. Coll. F. Tepper.

The smallest species of this section of the family known to me.

✓ CARMENTA SANBORNII. n. sp.

Bronze black. Fore wings with very minute vitreous space beyond cell. Beneath they are cream yellow for about their basal half, the yellow being flecked with brown scales. Palpi, fore femora, and the posterior edge of fourth and sixth abdominal segments, yellowish white.

Exp. wings. 8 m.m.

2 ♂. 1 ♀. Andover, Mass. (F. G. Sanborn.)

Types. Coll. Boston Soc. Natural History.

CARMENTA FRAXINI. n. sp.

Wholly bronze black. Fore wings with a very small vitreous dash near base, and a bright orange discal dot at extremity of cell. Costal margin greenish black, a purplish tint on the posterior margin. Hind wings vitreous, rather narrowly margined, with a bunch of whitish hairs at their base. Under side of wings a little more golden than the upper. Antennæ, palpi, femora, tibiæ and tarsi, brownish black. Abdomen with no trace of band, except on posterior margin of fourth segment beneath, which is pale yellow. Caudal tuft small, brownish beneath, black above.

Exp. wings. 16 m.m.

1 ♂. Washington, D. C. (C. V. Riley.)

## ALBUNA. nov. gen.

Under this name I separate a number of species, which seem to me to possess characters sufficient to form the types of a new genus. Compared with *Ægeria* proper, and taking *Æg. Acerni* as the North American type of that genus, the head is much narrower than the front of the thorax, which is not so far produced beyond the base of the wings. The antennæ are comparatively shorter, stouter and more thickened toward the apex. The palpi are slightly longer and more porrect. The legs are shorter proportionately and the tibiæ more densely clothed with hair. The abdomen of the ♂ is never constricted at the base, is stout, cylindrical, with the caudal tuft small, and not spreading. That of the ♀ is fusiform, quite as broad at base as the thorax, and tapering to a point. The markings of the wings are heavier and broader than in *Ægeria*, the discal mark being always oblique, and the space between the sub-median nervule and the internal marginal nervule always covered with scales. For the group, these are rather large insects, allied to *Bembecia*, but the antennæ are not so deeply pectinated, the body is more fusiform, and the caudal tuft is not spreading.

Type. *Æg. hylotomiformis*. (Walk.)

✓ ALBUNA RESPLENDENS. n. sp. *Melanimorpha Soda*

♂. Fore wings with the whole surface very bright orange red, the costal margin a little shading into golden brown, and the corner of the nervules indicated by golden brown streaks. Hind wings with the margin narrowly orange red. Fringes of both wings golden brown. Beneath, the markings are repeated, but the costal edge of the fore wings is lemon yellow. Head and antennæ black, the former with some blue metallic scales between the eyes. Thorax with broad lateral and narrow basal stripe, golden yellow. Abdomen with first, second and third segments broadly banded posteriorly with golden yellow, fifth, sixth and seventh wholly golden yellow, as is also the caudal tuft. Under side of abdomen, palpi, coxæ and all the legs golden yellow, the tibiæ banded at the joints with black. ♀. Similar to the ♂, but a little more robust, the posterior segments of abdomen banded with, but not wholly, golden yellow.

Exp. wings. 23 m.m.

1 ♂. Soda Springs, Siskiyou county, Cal. (I. Behrens.) 2 ♀. Sierra Nevada, Cal. (S. Brannan.)

Type. Coll. Hy. Edwards.

ALBUNA RUTILANS. n. sp.

Fore wings with the costal margin broadly purplish brown, the internal and posterior margins deep golden yellow, not by many degrees of so red a shade as in the preceding species. The nervules are marked by brownish streaks. Hind wings with costal margin lemon yellow, the outer margin deep golden yellow.

low, edged anteriorly by a narrow brown band. The fringes of both wings are golden brown. Underside of wings pale golden yellow, the rest of the markings repeated. Head and antennæ dull black. Thorax with the usual narrow lateral and basal yellow lines. Abdomen with all the segments banded with pale golden yellow, the third and fifth being the widest. Caudal tuft golden yellow, black in centre and at the sides. Palpi and all the legs golden yellow, the tibiæ banded at the joints with black.

Exp. wings. 20 m.m.

1 ♀. Virginia City, Nevada. (H. E.)

Type. Coll. Hy. Edwards.

✓ *ALBUNA RILEYANA*. n. sp.

In this, which very closely resembles some of the Pacific Coast forms, the fore wings are wholly golden brown, except the discal mark and the basal half of internal margin, which are reddish orange, and the base, which is jet black. The hind wings have the transverse mark and the base of abdominal margin reddish orange. Fringes of both wings golden brown, except that of the abdominal margin, which is yellow. Beneath, the markings are strongly repeated. Head black. Antennæ brown, paler at the base. Thorax with narrow lateral and broad basal, yellow streaks. Abdomen with all the segments, except the first, equally banded with pale golden yellow, the bands extending underneath. Caudal tuft brownish, speckled with yellow. Palpi, coxæ and all the legs golden yellow, the tibiæ banded with black at the joints.

Exp. wings. 24 m.m.

1 ♀. Cadet, Missouri. (Prof. C. V. Riley.)

*ALBUNA ARTEMISLÆ*. n. sp.

Fore wings greenish black, especially so along the costa. The internal margin, some streaks on the posterior margin and the posterior portion of discal mark, dull orange. Costal and abdominal margins of hind wings, pale lemon yellow. Fringes of both bluish black. Fore wings beneath have the costal and internal margins lemon yellow, hind portion of discal mark, dark orange, and posterior margin streaked with pale orange. Hind wings as on upper side. Head and antennæ black. Collar deep lemon yellow, as are also the sides of the thorax. Abdomen with the segments banded posteriorly with bright yellow. The first and second bands are very narrow; the third is notched posteriorly; the fourth without band. The remaining segments are very broadly banded. Caudal tuft, black above and beneath, with a few yellow hairs at the sides. Palpi yellow, brown at their tips. Fore coxæ, blackish, yellow at the sides. Middle and hind coxæ wholly black. Fore tibiæ brownish yellow, banded with black. Middle and hind tibiæ, bright yellow, bluish black above. Tarsi, all yellow.



Exp. wings. 18 m.m.

1 ♂. Sier. Nev. Calif. (H. E.) on flowers of *Artemisia vulgaris*. L.

ALBUNA MONTANA. n. sp. *hypomontana* Wlk

♂. Forewings with the costal and posterior margins bronze black, with a few silvery scales at the base. The discal mark is broad, oblique, widest at the costal edge, as in all the genus. The internal margin is reddish orange for about  $\frac{2}{3}$  of its length, and the discal mark is also edged posteriorly with the same color. The lower wings have the base stained with dull orange, and most of the nervules are the same color. The fringes of both wings are brown. Beneath, the wings are pale dull orange for about their basal  $\frac{2}{3}$ . Posterior margin and discal mark, dull brown. Head and antennæ black, the latter brownish beneath. Orbits of eyes, white. Collar, cream color. Thorax black, with the base and the tegulæ behind, cream color narrowly. Abdomen with 1st, 2nd, 4th, 5th, 6th segments, edged posteriorly with cream color, the bands extending to the lower side. Caudal tuft black, sprinkled with a few yellow hairs. Palpi, cream color. Fore coxæ lead color, white on the outer edge. Femora reddish brown. Tibiæ, pale yellow, banded with black at the joints.

♀. Generally a little larger than the ♂, with the red on the forewings more distinct, and the yellow of the abdominal band of a brighter tint.

Exp. wings. ♂. 25 m.m. ♀. 32 m.m.

21 Examples. ♂. ♀.

White Mountains, N. H. (Morrison. Grote.) Nevada, Colorado. (Morrison.) Anticosti Isld. (Couper.) Sier. Nevada, Cal. (H. E.)

Colls. Tepper, Graef, Neumoegen, W. Grey, Dr. Bailey, Hy. Edwards, etc., etc.

A very variable insect, and of wide distribution, passing probably by degrees into the following species.

✓ ALBUNA TANACETI. n. sp.

Probably a variety of *A. montana*. It is smaller, and the reddish orange of the forewings is more distributed over the whole surface, both above and below.

Exp. wings.

Several examples ♂. ♀. Colorado, (H. K. Morrison.) Mt. Hood, Oregon, (Morrison.) Calif., Sier. Nev., Cal., Vancouver Isld. (H. E.)

Colls. Neumoegen, Graef, Tepper, Hy. Edwards.

It is possible that both this and the preceding species are forms of Walker's *Æg. hylotomiformis*.

✓ ALBUNA VANCOUVERENSIS. n. sp.

Much blacker than *Al. montana*. A heavy reddish orange line between the sub-median nervule and the internal margin,

and the under side of wings are slightly marked with reddish orange. Legs almost entirely black. In fresh specimens the bands of posterior abdominal segments are composed of silvery blue scales.

Exp. wings. 22 m.m.

7 examples. ♂. ♀. Vancouver Isld. (H. E.) Colorado, (Morrison.)

Type. Coll. Hy. Edwards.

✓ *ALBUNA COLORADENSIS*. n. sp.

In this form the reddish orange is entirely obliterated, and the insect bears a near resemblance to the following: (*A. torva*.) It differs from that species, however, by having the abdomen banded faintly with silvery blue scales, as in *A. Vancouverensis*, and by the presence of a few scales of the same color in the vitreous spaces of the fore wings. It is smaller also, and the under side of the wings has a golden reflection, not seen in either *Al. Vancouverensis* or *Al. torva*.

Exp. wings. 21 m.m.

1 ♀. Colorado. (H. K. Morrison.)

Type. Coll. Hy. Edwards.

✓ *ALBUNA TORVA*. n. sp.

Entirely dull, brownish black, wholly unrelieved by any other color, with the exception of a very narrow whitish posterior margin to the three basal abdominal segments, which is scarcely visible without a lens.

The only species, so unicolorous, known to me.

Exp. wings. 22 m.m.

3 ♀. Glen. Mt. Washington, N. H. Vancouver Isld. (H. E.) Colorado, (Morrison.)

Types. Coll. Bost. Soc. Natl. Hist. Hy. Edwards.

✓ *ÆGERIA FLAVA*. n. sp.

Size of *Æg. tipuliformis* L. Fore wings with a bright golden yellow cast, which pervades even the vitreous space. Costal margin, golden brown. Discal mark, golden brown in front, edged posteriorly with rich orange. Vitreous space continued nearly to the posterior margin marked only by the nervures. Costal margin of hind wings golden yellow, other margins golden brown. Antennæ bright dark orange, brownish at the base. Palpi, collar, and fore femora lemon yellow. Tibiæ and tarsi golden, brownish without, and slightly banded with black. Thorax with base and two very distinct stripes on sides, lemon yellow. Abdomen with all the segments distinctly banded with lemon yellow, that of the fourth segment being the broadest. Beneath the abdomen is deep lemon yellow. Caudal tuft yellow, black in the centre.

Exp. wings. 16 m.m.

1 ♀. Colon. Isth. Panama. (T. L. Mead.)

Type. Coll. Hy. Edwards.

*ÆGERIA AURATA.* n. sp.

Small, size of *Æg. ceriiformis* Led. Fore wings wholly vitreous at the base, with the exception of the margins, of which the costal is rather broad, brown, edged posteriorly with gold. Posterior margin, gold color, with the nervules marked with purple. Hind wings edged narrowly with gold on costal, golden brown on other margins. Under side of wings same as the upper. Palpi and legs wholly golden, the latter faintly banded with a darker shade. Antennæ, golden beneath, brown above. Thorax and abdomen brownish, the former with the sides golden yellow, the latter with all the segments banded with golden yellow, the two middle bands being the widest. Beneath the abdomen is wholly golden yellow, and the caudal tuft is the same color.

Exp. wings. 11 m.m.

1 ♂. Panama. (H. E.)

Type. Coll. Hy. Edwards.

*ÆGERIA CORNI.* n. sp.

Allied to *Æg. accrui*. Clem. Costal and posterior margins of fore wings, large discal spot, linear internal margin, and narrow margin of hind wings dull black. Palpi, collar and underside of caudal tuft, bright orange. Pectus and fore femora, pale yellow. Antennæ black, fuscous at the apical third. Tibiæ and tarsi, blackish without, yellow within. Spurs, pale orange. Thorax and abdomen purplish black, the former with a few lateral hairs, and the latter with a slight golden reflection. No bands.

Exp. wings. 15 m.m.

1 ♂. On *Cornus sericea* L. Purgatory Swamp, Mass. (Mrs. Hy. Edwards.)

Type. Coll. Hy. Edwards.

*ÆGERIA SAXIFRAGÆ.* n. sp.

Allied to *Æg. fulvipes*, Harris, but differing from it by having the abdomen wholly blue black, above and below, and the antennæ also wholly black. Both pairs of wings have some reddish orange scales at their base, and the under side of caudal tuft is also reddish orange.

Exp. wings. 15 m.m.

1 ♂. Colorado. (Morrison.)

Type. Coll. Hy. Edwards.

*ÆGERIA VERECUNDA.* n. sp.

At first sight like *Æg. lycopsiformis* Esp., but the fore wings are almost entirely opaque. The fore wings are blackish brown along costal margin. The course of the sub-median nervule, the discal mark, and the extreme posterior margin are also the same color. The rest of the wing, including the spaces usually vitreous, is sordid white. Hind wings have a brassy tinge, and are blackish at their base. Fringe, bronze black, edges, sordid white. Both wings, beneath sordid white, clouded with bronze black. An

tennæ, blackish brown above, ash color beneath. Head in front, sordid white, crown yellowish. Palpi, orbit of eyes, fore coxæ, collar, lateral and basal stripes of thorax, sordid white. Abdomen with second segment blotched with sordid white, the fourth and sixth with narrow band of same color posteriorly, that of the fourth extending to the underside. Caudal tuft wholly black. Tibiæ and tarsi bluish black, speckled with sordid white.

Exp. wings. 20 m.m.

1 ♂. 2 ♀. Colorado. (Morrison.)

Type. Coll. Hy. Edwards. F. Tepper.

A very aberrant species as regards its coloration.

*ÆGERIA BRUNNEIPENNIS*. n. sp.

Fore wings rich brown, black at extreme base, the interior margin for half its length, and the posterior half of discal mark, reddish orange. The hind wings have a reddish orange shade at the base of abdominal margin. Fringes of both wings golden brown. Beneath, the wings are yellowish at their base for about half their length. Costa of hind wings orange, the rest as on upper side. Antennæ and head dull black, front deep yellow. Thorax black, with round blotch at base of wings, tegulæ behind and base, golden yellow. Abdomen with the posterior margins of second and third segments narrowly, and fourth, fifth and sixth broadly edged with golden yellow. Palpi, fore coxæ, and hind tibiæ golden yellow, the latter banded at the joints with black. Fore and middle tibiæ rather darker in color.

Exp. wings. 23 m.m.

1 ♀. Georgia. (Morrison.)

Type. Coll. F. Tepper.

*ÆGERIA RUBROFASCIA*. n. sp.

Fore wings purplish black, the median nervule running posteriorly very close to the internal margin, the discal mark is, therefore, very long, both its edges being nearly straight. Beneath, the fore wings have some streaks of straw color along the costal edge and at the base. Fringes, above and below, purplish brown. Head, thorax and abdomen, purplish black, the latter having the fourth and fifth segments wholly reddish orange. Caudal tuft hastate, purplish black, with the tip whitish. Palpi, coxæ, femora and tibiæ, dull black, with metallic lustre. All the tarsi and spurs sordid white.

Exp. wings. 20 m.m.

1 ♂. Georgia. (Morrison.)

Type. Coll. E. L. Graef.

*ÆGERIA BOLLI*. n. sp.

Fore wings dense black on the margins, the spaces between the veins on the posterior margin, orange. The wings are wanting in the purple reflection common to many species. Fringes, broadly brownish black. Beneath the markings of the upper side

are repeated. Head blackish brown, collar a dull yellow. Antennæ blue black. Thorax narrowly yellow at sides and base. Abdomen with first, second, third, fourth and seventh segments narrowly edged with yellow posteriorly, the band not extending underneath. Caudal tuft, black above, narrowly orange at the sides, orange beneath, except the base, which is black. Palpi orange, the tip brown. Fore coxæ, deep yellow. Tibiæ without brownish yellow, within golden yellow. Tarsi and spurs golden yellow, the former banded with black.

Exp. wings. 21 m.m.

1 ♂. Texas. (J. Boll.)

Type. Coll. B. Neumoegen.

Dedicated to the memory of Jacob Boll, an earnest and accomplished entomologist.

*ÆGERIA LUPINI*. n. sp.

Forewings purplish black, with bright golden reflection, the golden color being spread over the whole of the opaque space, which, with the costal and internal margins, are broad, leaving but small vitreous spaces. Costal margin of hind wings, lemon yellow, hind margins golden brown, with the extreme edge bright golden. Beneath, the forewings are wholly golden yellow, the discal marks, and the nervular streaks of posterior margins, purplish. Hind wings with the margins, broadly golden yellow. Head with the front, brown black, deep yellow at the base of antennæ. Collar deep yellow. Thorax with very narrow lateral line, and the scutellum, pale yellow. Abdomen with the 3rd segment anteriorly, and the 5th posteriorly edged with pale yellow. The other segments without bands. Caudal tuft black above, orange at the sides, and pale yellow beneath, with the base black. Antennæ blue black. Palpi pale yellow, with black hairs beneath. Fore coxæ yellow without, blackish within. Middle and hind coxæ and tibiæ blackish, the latter with the outside pale yellow. Tarsi all yellow.

Exp. wings. 14 m.m.

2 ♂ 1 ♀. Marin & Mendocino Cos., Calif. (H. E. and O. Baron.)

Type Coll. Hy. Edwards.

*ÆGERIA PERPLEXA*. n. sp.

Very nearly allied to *Æg. tipuliformis* L., but smaller, with the discal mark more triangular, and the internal margin broader. The forewings are clouded with orange along the internal margin, and the fringes are golden brown. The antennæ are brownish for their basal third, black at the apex. Abdomen steel blue, with the edges of the third and fifth segment narrowly bordered posteriorly with pale yellow. Caudal tuft blackish above, orange at sides and beneath, except at base, where it is black. Under side of forewings golden yellow, with the discal mark purplish



black, as also are the courses of the nervules on the posterior margin. Palpi yellow above, with blackish hairs beneath. Fore coxæ blackish, with the exterior edge pale yellow. The fore and middle tibiæ are blackish above, pale yellow beneath. Hind tibiæ, yellow, banded with black. All the tarsi yellow, speckled with black.

Exp. wings. 13 m.m.

1 ♂. Texas. (J. Boll.)

Type. Coll. B. Neumoegen.

ÆGERIA IMPROPRIA. n. sp.

Forewings bronze black, with the internal margin rather broad, and enclosing an orange line. The intronervular marks of the posterior margin are also orange, as are the edges of the discal mark. Fringes of both wings, bronze black. Antennæ steel blue. Head and thorax brownish black, with the collar and narrow lateral stripes, pale yellow. Abdomen with second and fourth segments edged posteriorly with pale yellow. Caudal tuft, black above, orange at the sides, black beneath, except the tip, which is orange. Palpi yellow above, black beneath, tip also black. Legs as in *Æg. perplexa*.

Exp. wings. 15 m.m.

2 ♂ Marin Co. and Sier. Nev. Cal. (H. E.) 1 ♀. Washington Ter. (Morrison.)

Types Coll. Hy. Edwards. B. Neumoegen.

✓ ÆGERIA SEXFASCIATA. n. sp.

Forewings golden purple, darkest along the costa, the intronervular spaces being bright gold. Fringes of both wings, golden brown. Beneath, marked as on the upper side, but with the costal and internal margins bright yellow. Head brownish, front with silvery greenish scales. Antennæ black. Thorax with collar and rather broad lateral stripes, deep yellow. Abdomen with all the segments except the fifth narrowly bordered posteriorly with pale yellow. Caudal tuft, purplish black above, pale yellow beneath, sides pale yellow. Palpi and anterior coxæ pale yellow. Tibiæ, pale yellow, banded with purplish black.

Exp. wings. 20 m.m.

2 ♂ Texas. (J. Boll. Belfrage.)

Types Coll. Hy. Edwards, B. Neumoegen.

✓ ÆGERIA CORUSCA. n. sp.

Allied to *Æg. sexfasciata*, but smaller and much brighter in color. The forewings are purplish along the costa, coppery along the course of the nervules, bright golden in the intronervular spaces, and along the internal margin. The discal mark is also bright golden. Abdominal margin of hind wings pale yellow, the rest golden brown. Fringes of both wings brown. Beneath, the yellow is pale, the markings being repeated in a less prominent degree. Head brownish, with shining blue metallic scales

between the eyes. Antennæ, purplish brown above, reddish beneath, especially at the base. Thorax purplish brown, with very narrow lateral and basal lines of pale yellow. Abdomen purplish brown, with a few scattered bluish scales, the first, second, third, fourth and sixth segments very narrowly banded with pale yellow, the bands not extending beneath the abdomen. Caudal tuft, purplish brown, a little yellow beneath. Palpi pale yellow, terminal article, brownish. All portions of the legs pale yellow beneath, purplish brown above, except at the joints, where they are pale yellow.

Exp. wings. 14 m.m.

1 ♂. Texas. (Belfrage.)

Type. Coll. Hy. Edwards.

ÆGERIA AUREOLA. n. sp.

Color and size of *Æg. uroceriformis*, to which species it is closely allied. Forewings purplish brown, along two-thirds of costal margin. Discal mark also purplish brown, as are also the courses of the nervules. The rest of the wing, bright golden orange. Margin of hind wing, purplish brown, with orange line at base of the fringe. Fringes of both wings golden brown. Under side, lemon yellow, except the discal mark and the ends of the nervules, which are purple brown. Head and antennæ black, the latter with basal joint, golden yellow. Thorax with lateral and basal lines golden yellow. Abdomen with second, fourth, and sixth segments broadly yellow behind. First has very narrow line, third without band, and fifth with scattered yellow scales. Caudal tuft golden yellow, black in centre. Palpi, fore coxæ, pectus, and legs golden yellow, the tibiæ banded at their joints with purplish black.

Exp. wings, 19 m.m.

1 ♀. Nevada. (Morrison.)

Type. Coll. E. L. Graef.

✓ÆGERIA CONSIMILIS. n. sp.

So closely allied to the European *Æg. cephiiformis*, Ochs. as to be very difficult to distinguish them. The present species is blackish brown, the posterior margins of forewings, with golden reflection. The palpi are wholly golden yellow, except the terminal joint, which is black. The base of the wings beneath, the fore femora, the whole of the tibiæ and tarsi inwardly are pale golden yellow, as are also the abdomen beneath and the sides of caudal tuft below. Outwardly, the middle and hind tarsi are black, banded with golden yellow. The bands on abdomen are five in number, very narrow, pale yellow.

Exp. wings, 20 m.m.

1 ♂ Dorchester, Mass. (P. S. Sprague.)

Type. Coll. Boston Soc. Natl. History, No. 1345.

The chief difference between this species and *Æg. cephiiformis*-

*mis* is as follows: In the European species the palpi are black at the sides, the abdomen black beneath, with the rings plainly shown, and the tarsi are wholly yellow, ringed with black, and not as in the present form, yellow only inwardly.

The ♀ of *Æg. consimilis* is unknown to me.

*ÆGERIA HYPERICI.* n. sp.

The nearest European ally to this species is *Æg. ichneumoniformis*, S. V. The margins of the wings are all very narrow. Costa and base of forewings, bronze brown. Internal margin, and discal mark, reddish orange. Posterior margin, and margin of hind wings, golden brown, with the fringes a little paler. Wings beneath, same as on the upper side. Head, antennæ, exterior of palpi, thorax and abdomen black, all the segments of the latter, above and below, narrowly bordered with lemon yellow. Interior of palpi, fore femora, and the whole of the tibiæ and tarsi golden yellow. The middle and hind femora are black, and there are small spots of black on the tibiæ, at the junction of the spurs. Caudal tuft, alternately black and yellow.

Exp. wings, 24 m.m.

2 ♀. West Virginia. T. L. Mead.

Types. Coll. Hy. Edwards.

✓ *ÆGERIA EUPATORII.* n. sp.

Head and antennæ blackish brown, the latter obscurely banded near the apex with sordid white. Thorax and abdomen purplish brown, the former with a narrow line on the sides, and the scutellum dull golden yellow. The segments of the abdomen are narrowly bordered posteriorly with the same color, the bands of the third and fifth being the least conspicuous. Caudal tuft dull orange. Palpi whitish beneath, dull yellow above, with the terminal article light brown. Anterior coxæ and tibiæ dull yellow. Middle and posterior coxæ and tibiæ, pale lead color with golden tint. All the tarsi dull yellow, the posterior pair banded with purplish brown near the joints. Fore wings golden brown, with reddish orange scales, the opaque spaces varying in their width. Fringes of both wings golden brown. Underside of fore wings golden yellow along costal and interior margins, purplish brown at posterior margins, marked with golden streaks.

Exp. wings, 23 m.m.

2 ♀. Long Island, N.Y. In stems of *Eupatorium purpureum*. L. Mr. S. L. Elliot.

✓ *ÆGERIA INFIRMA,* n. sp.

Very delicate in appearance, with the margin of forewings extremely narrow, straw yellow, the discal mark large, black, as is also the posterior marginal patch. The hind wings have the veins and margins remarkably fine. The color of thorax and abdomen is the same as in *Æg. eupatorii*, but the abdominal bands are narrower and fainter. The caudal tuft deep rich orange.

Otherwise as in *Æg. eupatorii*, of which species it may possibly be the ♂.

Exp. wings, 18 m.m.

1 ♂. Long Island, N. Y. (S. L. Elliot.)

Type. Coll. S. L. Elliot.

ÆGERIA IMITATA. n. sp.

Closely allied to *Æg. eupatorii*, but differing from it by having the antennæ very distinctly banded with clear white for the apical half, the basal half being steel blue. The thorax has the base *wholly* pale yellow, the bands of the abdomen are wider than in *Æg. eupatorii*, and the caudal tuft has the central portion brown, while the tibiæ are blackish, with purple reflection.

Exp. wings, 21 m.m.

1 ♂. Pennsylvania.

Type. Coll. B. Neumoegen.

✓ ÆGERIA MORULA. n. sp.

Size and aspect of *Æg. stelidiformis*, Frr. Fore wings with the margins very broadly black, vitreous spaces sordid white. Fringes of both wings, brownish black. Under side of forewings sordid white, except discal mark, nervules, apex and posterior margin, which are black. Antennæ and legs wholly black, except the underside of tarsi and the spurs, which are sordid white. Palpi, narrow lateral stripes on thorax and three narrow bands on abdomen sordid white. Caudal tuft black above, sordid white beneath.

Exp. wings, 20 m.m.

1 ♂. Texas. (J. Boll.)

Type. Coll. B. Neumoegen.

ÆGERIA KOEBELEI. n. sp.

Purplish black, the posterior margins of fore wings with slight golden reflection. The base of internal margin and of the median nervule is very pale yellow. Margins of hind wings extremely delicate. Beneath, the fore wings are very pale yellow, deeper at the posterior margin, and there shaded with gold and purple. Head black on crown, with some pale golden metallic scales in front. Orbits of the eyes white. Antennæ black, with rufous stain near the apex, only visible above. Thorax has collar, front and sides clothed with scales of peculiar blue metallic lustre. Abdomen similarly clothed, with second and fourth segments narrowly banded with very pale yellow, the band of fourth segment reaching beneath the abdomen. Caudal tuft brassy black, yellow beneath, and with fine yellow hairs at the sides. Fore coxæ white, as is also the pectus, the latter bordered by pale blue metallic scales. Femora and tibiæ yellow beneath, marked with purple black at the joints above. Tarsi speckled with black at the joints above, yellow beneath.

Exp. wings, 13 m.m.

1 ♂. Tallahassee, Florida. (A. Koebele.)

Type. Coll. Hy. Edwards.

I have dedicated this pretty species to its captor, who is one of the most earnest and observant collectors in the United States.

*ÆGERIA WASHINGTONIA*. n. sp.

Deep black, the vitreous space behind discal mark being nearly circular. The fore wings have very slight golden tinge, produced by a few golden scales scattered along the posterior margin. Abdominal margin of hind wings slightly yellowish, the rest brownish black. Head and antennæ black, the latter rusty beneath. Thorax with short, narrow lateral line at base of wings, no basal line. Abdomen with second segment very narrowly, fourth broadly banded with yellowish white. Caudal tuft black, pale orange at the sides. Palpi deep yellow within, blackish without. Legs nearly all black, flecked with yellow scales, the tibiæ with the anterior portion banded with yellow.

Exp. wings, 19 m.m.

1 ♂. Washington Terr. (Morrison.)

Type. Coll. Hy. Edwards.

*ÆGERIA DECIPIENS*. n. sp.

Fore wings with the vitreous space beyond the cell unusually large, leaving only a very narrow posterior margin. The costal margin is brown, the discal mark orange, and the posterior margin golden, with the lines of the nervules blackish. Fringes of both wings golden brown. The under side is golden yellow, streaked by the nervules as above. Head and antennæ black, the latter dusky at the tip, and with a few yellow hairs at base. Thorax brassy black, with no lateral, but rather broad basal line divided in the centre. Abdomen brassy black, second segment very narrowly, fourth broadly and sixth narrowly edged with pale yellow. Between the bands are some pale blue metallic scales. Caudal tuft hastate, black, pale yellow at the sides. Palpi blackish above and without, yellow within. Tibiæ and tarsi golden yellow, banded with black.

Exp. wings, 15 m.m.

1 ♂. Colorado. (Morrison.)

Type. Coll. E. L. Graef.

*ÆGERIA NEGLECTA*. n. sp.

Fore wings nearly opaque, the usual vitreous spaces being thinly clothed with scales. The discal mark is, however, apparent, and is large and blackish. The ground color of the wings is golden brown, with bright gold scales scattered over the surface. Margins and fringes of both wings golden brown. Beneath, the wings are golden yellow, with purplish lustre, flecked with brown scales. Discal mark purplish. Fringes of both wings golden, with brown ciliæ mixed. Head and antennæ brownish black. Thorax with narrow lateral and basal pale yellow stripes. Ab-



domen with second and fourth segments narrowly banded posteriorly with very pale yellow. Caudal tuft brownish, the tip yellow beneath. Palpi, pectus, fore coxæ, base of tibiæ and tarsi pale dull yellow. Femora brownish black. Tibiæ broadly banded with black at the joints. Tarsi speckled with black.

Exp. wings, 15 m.m.

1 ♂. Olympia, Washington Ter. (H. E.)

Type. Coll. Hy. Edwards.

ÆGERIA IMPERFECTA. n. sp.

Fore wings golden purple, the golden shades being chiefly along the base of internal margin and the intronervular spaces. The usual vitreous space behind the discal mark is here almost obsolete, its position being covered with scales. Fringes golden brown. Beneath, the wings have a most brilliant opalescent tint, with the colors and markings of the upper side repeated. Head and antennæ dull black. Thorax with narrow basal, but no lateral lines. Abdomen with first, second, third and sixth segments very narrowly banded behind with pale yellow. The fourth segment has a wide band, reaching beneath the abdomen, which the others fail to do. Caudal tuft brassy black, yellow at the sides. Palpi blackish beneath, yellow at the tips. Coxæ and femora blackish. Tibiæ and tarsi yellow, the former banded at the joints.

Exp. wings, 13 m.m.

1 ♂. Colorado. (Morrison.)

Type. Coll. Hy. Edwards.

ÆGERIA HEMIZONÆ n. sp.

Fore wings rich golden brown with purplish reflection. All the borders are broad, leaving in consequence a small transparent space. The veins of the posterior margin are distinctly black. Discal mark purple black, orange posteriorly, with golden reflection. Hind wings with margins golden. Fringes of both wings golden brown. Head black, with several shining pale blue scales in front. Antennæ dull black. Thorax with the collar, tegulæ and base lemon yellow. Abdomen with all the segments banded posteriorly with deep lemon yellow, the bands on first and third being the narrowest. Caudal tuft deep lemon yellow, with the centre blackish. Beneath, the whole of the margins of the wings are bright deep golden, the discal mark of fore wings reddish orange. Palpi, fore coxæ and tibiæ lemon yellow, the latter banded with brown at the junction of the tarsi. The abdomen has all the segments beneath very narrowly banded posteriorly with pale yellow.

Exp. wings, 18 m.m.

2 ♂ 1 ♀. Nevada. On *Hemizonia luzulifolia*. D. C. (H. E.)

Type. Coll. Hy. Edwards.

ÆGERIA SENECIOIDES. n. sp.

Allied to the preceding species, but larger, with the internal

margin of forewings transparent below the submedian nervule, the transparent space reaching nearly to the base. The color of the wings is reddish orange, without any of the purplish tint of *Æg. hemizoniæ*, and the caudal tuft is much wider, with the centre lemon yellow, sides blackish, and wholly lemon yellow beneath, except the base, which is black. The abdomen beneath is very broadly banded with yellow. The fore wings beneath have the discal mark reddish orange and the posterior margins purplish brown.

Exp. wings, 22 m.m.

1 ♂. California. On *Senecio Douglassii*. D. C. (H. E.)

1 ♀. Nevada. (H. K. Morrison.)

Types. Coll. Hy. Edwards. F. Tepper.

*ÆGERIA REFULGENS*. n. sp.

Very bright golden brown. The fore wings very narrow, costal edge brown. Discal mark brown in front, reddish orange behind. Vitreous space small, linear. Fringes of both wings golden brown. Beneath the wings are brighter than above, the intronervular spaces being bright golden orange. Head and antennæ black. Thorax black, with very narrow golden yellow streak at sides, and a broader one at the base. Abdomen black, second, fourth and sixth segments banded behind with golden yellow. Caudal tuft black, golden yellow at the sides. Palpi, tibiæ, coxæ and tarsi golden yellow, the tibiæ black at the joints.

Exp. wings, 19 m.m.

1 ♂. Georgia. (Morrison.)

Type. Coll. F. Tepper.

*ÆGERIA OPALESCENS*. n. sp.

Steel blue, the fore wings with the opaque spaces greenish black, the vitreous spaces very opalescent, with a few silvery scales. Hind wings with bright opalescent reflection. Fringes of both wings purplish black. Beneath, the silvery scales of fore wings are much more numerous, extending over the whole vitreous surface. Head, palpi and antennæ deep jet black. Thorax concolorous with fore wings. Abdomen dark steel blue. The whole of the under surface greenish black, the tibiæ having at their base a tuft of whitish hairs. Spurs whitish, speckled with black.

Exp. wings, 28 m.m.

3 ♂. Virginia City, Nevada. (H. E.)

1 ♀. Colorado. (Morrison.)

Type. Coll. Hy. Edwards.

*ÆGERIA NOVAROENSIS*. *Behrens*. M. S.

♂. Head, palpi, collar, tegulæ, large spot on disk of thorax and one at base, rich orange red. Abdomen blue black, with six orange red bands above, and wholly orange red beneath. Caudal tuft wholly orange red. The tibiæ and tarsi are the same rich

color, ringed at the base with steel blue. Both wings opalescent, the anterior pair with the costal margin narrowly, and the posterior margin broadly, bluish black. Discal mark large, bluish black. Antennæ dull black.

♀. Similar to the ♂, but with the abdominal band rather narrower, and the hind tibiæ and tarsi dusky.

Exp. wings, 34 m.m.

1 ♂. Soda Springs, Siskiyou Co., Cal. J. Behrens.

1 ♀. Novaro, Mendocino Co., Cal. J. Behrens.

Types. Coll. Hy. Edwards.

ÆGERIA GILIÆ. n. sp.

Allied to the European *Æg. asiliformis*, Rott. The narrow costal border of fore wings, the moderate posterior margin, and the almost obsolete internal margin are golden brown, the discal point at termination of cell (discal mark) reddish golden. The narrow marginal border of hind wings, and fringes of both, golden brown. Under side of fore wings bright yellow at base, and along two-thirds of costal margin, where it gradually shades into golden brown. Discal mark reddish orange. Hind wings also bright yellow at base, and along half the costal edge, where the color shades into golden brown. Fringes of both wings as on the upper side. Antennæ blackish brown. Palpi and pectus lemon yellow. Tibiæ yellow, black posteriorly. Hind tarsi flecked with dusky. Thorax bluish black on disk, with the sides narrowly lemon yellow. Abdomen with three distinct and rather broad bands of lemon yellow, which are widened greatly on the under side, making this nearly all yellow. Caudal tuft yellow, with a few black hairs intermixed.

Exp. wings, 24 m.m.

1 ♀. Colorado. (Morrison.)

Type. Coll. Hy. Edwards.

This species differs from *Æg. asiliformis*, Rott., in the browner color, and the discal mark being concolorous with the borders, while in *Æg. asiliformis*, the latter are black, and the discal mark fiery red, being thus thrown into strong contrast with the other portions of the wing. The abdominal bands, too, in *asiliformis* are distinct, both above and below, while in *giliæ* they are beneath almost joined into one yellow space, scarcely showing the division of the segments.

ÆGERIA MIMULI. n. sp.

Allied to the previous species. Fore wings with the extreme base black, and beyond this a longitudinal fiery reddish streak. Costal and internal margins golden brown. Posterior margins much paler, almost pure gold color. Discal mark, fiery reddish orange. Hind wings with the narrow margin golden brown. Fringes of both wings a little paler than the margins. Antennæ, black above and below, pale buff at the sides. Front, palpi, and pectus, cream white. Femora bluish black. Tibiæ whitish in their centre, steel

blue at both extremities. Tarsi a little deeper yellow, speckled with black. Thorax and head black, the former with the collar, sides and base very pale yellow. Abdomen with six very pale yellow bands, the second and fourth being half the width of the others. Caudal tuft composed of pale yellow and black hairs, equally mixed.

Exp. wings, 22 m.m.

1 ♂. Colorado. (Morrison.)

Type. Coll. Hy. Edwards.

At first sight this species appears to be very close to *Æg. giliæ*, but it has double the number of abdominal bands, and is a paler insect, with the fore wings decidedly narrower.

*ÆGERIA MADARIÆ.* n. sp.

Fore wings rich golden purple, with the golden shade most apparent at the posterior margin. Vitreous space very small, reduced to a mere line before, and a minute circular spot behind the discal mark, the latter space almost closed by the black nervules. Margin of hind wings golden brown. Beneath, the fore wings are golden, with purple brown costal streak, and the nervules are also purple brown. The margin of hind wings are paler than above. Palpi, fore and middle femora, and hind tarsi, pale golden yellow. Antennæ black. All the tibiæ marked with black at the junction of the spurs. Collar, sides of thorax, and posterior margins of first, fourth and seventh segment of abdomen, pale yellow. Abdomen purplish black on lower side. Caudal tuft, pale yellow on the sides, black in centre.

Exp. wings, 15 m.m.

3 ♂ 2 ♀. On *Madaria elegans* Don. Saucelito, Calif. (H. E.)

Types. Coll. Hy. Edwards.

*ÆGERIA ALBICORNIS.* n. sp.

Bronze black. Antennæ with the apical third clear white. The pectus and joints of the tibiæ are also white.

Exp. wings, 18 m.m.

1 ♂. Nevada. (Morrison.)

Type. Coll. F. Tepper.

*ÆGERIA PROXIMA.* n. sp.

Allied to the last. Bronze black, but with the palpi, edges of coxæ, and the middle of caudal tuft, clear white. Tips of tarsi clear white. Underside of fore wings pale yellow. Fringes golden brown.

Exp. wings, 20 mm..

White Mts. N. H. (Morrison.)

Type. Coll. F. Tepper.

*ÆGERIA INUSITATA.* n. sp.

Greenish brown throughout. Wings with all the margins very narrow, giving the insect a most delicate appearance. Orbits of the eyes, palpi beneath, collar, edges of fore coxæ, joints of

tibæ, and a narrow band on the fourth segment beneath, clear white. The lower side of abdomen has also a steel blue reflection.

Exp. wings, 24 m.m.

White Mts. N. H. (Morrison.) Andover, Mass. (F. G. Sanborn.)

Types. Coll. F. Tepper. Bost. Soc. Natural History.

*ÆGERIA NICOTIANÆ.* n. sp.

♂. Forewings bright golden purple, the latter color predominating along the costal margin. Vitreous space, almost linear, reaching nearly to the base of the wings, and closed posteriorly by the fiery red discal mark. Fringes of both wings, light golden brown. The under side of wings golden, the margin of the posterior pair the same color. Antennæ and head black, orbits of the eyes, clear white. Palpi golden yellow, darker above. All the legs pale golden yellow, the tibæ banded with steel blue. Thorax with anterior and posterior margins golden yellow. Abdomen black, with narrow golden bands on second, fourth and seventh segments, the middle one being the broadest. Caudal tuft, black, golden yellow at the sides.

♀. Similar to the ♂, but a little larger, and the reddish discal mark more apparent.

Exp. wings, ♂ 11 m.m.; ♀ 14 m.m.

1 ♂. 1 ♀. Texas. (J. Boll.)

Types. Coll. B. Neumoegen.

*PYRRHOTAENIA POLYGONI.* n. sp.

All the wings opaque. Greenish black, with metallic reflection. Basal half of internal margin of forewings, the basal two-thirds of posterior pair, palpi, collar, sides of pectus, sides of thorax, fourth and seventh segments of abdomen, and the sides of abdominal segments bright fiery red. Caudal tuft red in the centre, greenish black at the sides and beneath. Fore femora fiery red, the rest greenish black. Tibæ deep orange, black at the extremities. Tibial spurs, pale orange. Tarsi, greenish black.

Exp. wings, 18 m.m.

♂. San Miguel, Calif. (H. E.) On *Polygonum maritimum*. L.

Type. Coll. Hy. Edwards.

One of the most beautiful and striking species of the whole group.

*PYRRHOTAENIA FRAGARIAE.* n. sp.

♂. Forewings opaque. Costal half and posterior margin, pale golden green. Interior margin for about two-thirds of its distance, dark orange. Hind wings, vitreous in the centre, with the margins, and small discal spot, dark orange. Under side of wings, dark orange at base, golden brown on margin. Fringes, golden brown. Head, thorax and abdomen, greenish brown.



Palpi, collar, sides of thorax, sides of abdomen, broad band across sixth segment, and caudal tuft dark orange. Femora brown black. Tibiæ dark orange, black at their junction with the tarsi, which are orange, clouded with black.

♀. Similar to the ♂, but a little larger.

Exp. wings. ♂ 18 m.m. ♀ 21 m.m.

1 ♂ 1 ♀. Colorado. (Morrison.)

Types. Coll. Hy. Edwards.

PYRRHOTAENIA HELIANTHI. n. sp.

Differs from *P. fragariae*, in having the forewings nearly wholly golden green, with the exception of a narrow stripe of dark orange, from base about half way along the internal margin. The vitreous space on lower wings is exceedingly small, the wing being almost covered with scales.

Exp. wings, 17 m.m.

1 ♂. 1 ♀. Virginia City, Nevada. (H. E.) On *Helianthus*, sp.

Types. Coll. Hy. Edwards.

Closely allied to the preceding, of which it may be an extreme variety.

PYRRHOTAENIA ACHILLAE. n. sp.

Golden green, with metallic reflection. Very narrow line on sides of thorax, and a narrow basal line along internal margin of forewings, orange red. Under side of palpi, sides of pectus, and under side of caudal tuft dull orange red. Fringes of both wings, head, and antennæ, dull black.

Exp. wings, 15 m.m.

1 ♂. San Rafael, Califor. (H. E.) On *Achillea millefolia*. L.

Type. Coll. Hy. Edwards.

PYRRHOTAENIA TEPPERI. n. sp.

Forewings bronzed black, a little purplish on posterior margin. Hind wings with costa pale orange. Fringes of both wings, purplish black. Beneath, both wings are orange at the base, with the vitreous space opalescent. Antennæ and front of head, dull black. Crown of head, whole of thorax, two basal segments of abdomen, under side of abdomen, caudal tuft, palpi, pectus, and coxæ bright deep orange. Tibiæ pale orange within, purplish black without. Tarsi purplish black, mottled with orange.

Exp. wings, 23 m.m.

1 ♂. Georgia, (Morrison.)

Type. Coll. F. Tepper. to whom I regardfully dedicate this exquisite species.

PYRRHOTAENIA EREMOCARPI. n. sp.

Steel blue. Base of forewings, narrow stripe on sides of thorax, palpi beneath, and sides of pectus, fiery red. Caudal tuft also fiery red, with the sides steel blue. Fringes, golden brown.

Exp. wings, 20 m.m.

1 ♂. Sier. Nevada, Calif. (T. L. Mead.)

Type. Coll. Hy. Edwards.

PYRRHOTAENIA MEADII. n. sp.

Greenish black, with metallic reflection. Base of forewings half way along internal margin, base of hind wings half way along abdominal margin, and the basal half of both wings beneath, fiery red. Palpi beneath, sides of pectus, fourth, sixth, seventh abdominal segments, middle and under side of caudal tuft, also bright fiery red. Femora and tarsi greenish black. Tibiæ dark orange, greenish black at both the extremities.

Exp. wings, 20 m.m.

3 ♂. Lake Tahoe, Califor. (T. L. Mead.)

Types. Coll. Hy. Edwards.

Two of these examples have a much more greenish hue than the other, and one of them has a small vitreous dash on the forewings. I do not, however, regard them as specifically distinct. I have dedicated the species to my friend, Mr. Mead, who has so frequently added rare species to my collection.

PYRRHOTAENIA ORTHOCARPI. n. sp.

Nearly allied to *P. Meadii*. The forewings, however, are rather pale sage-green, reddish orange at their base, and for half way along the internal margin. The linear space vitreous before the cell in *P. Meadii* is here filled in with shining silvery scales, as is also the small space behind the cell. Held opposite to the light, these spaces appear to be transparent, but viewed obliquely they are quite opaque. The hind wings have their base, and about one-half their abdominal margin stained with reddish orange, the rest of the margin, golden brown. Antennæ black, palpi dark orange, with the terminal joint, black. Fore femora dusky orange. Middle and hind femora, and fore tibiæ and tarsi dusky. Middle and hind tibiæ and tarsi orange, the former banded with black at the base of the spurs. Thorax and abdomen golden green, the former with the sides reddish orange. The abdomen has the fifth and anal segments broadly reddish orange above, the whole of the segments beneath being bordered posteriorly with the same color. Caudal tuft, reddish orange, greenish black at the sides.

Exp. wings, 20 m.m.

3 ♂. 1 ♀. On *Orthocarpus luteus*. Nutt. Washoe Lake, Nevada, (H. E.)

Types Coll. Hy. Edwards.

PYRRHOTAENIA TEXANA. n. sp.

Fore wings dark bronze-green, yellowish at base, along internal margin, and with a sub-linear vitreous space not reaching to the base of the wing. Discal mark black. Beyond this an orange patch, composed of three streaks, following the course of

nervules. Margins of hind wings, purplish black. Beneath, the marks of the upper side are repeated, except that the base of the forewings is a little more orange-yellow. Antennæ and head black. Palpi and collar bright orange. Fore femora and tibiæ black, edged with orange. Hind tibiæ, bright bluish black, orange at the joints. Hind tarsi, black above, orange below. Abdomen with second, fourth and seventh segments, bordered posteriorly with fiery red. Beneath, the three anal segments are banded with orange red. Caudal tuft, greenish black.

Exp. wings, 20 m.m.

2 ♀. Texas. (J. Boll.)

Type. Coll. B. Neumoegen.

ZENODOXUS HEUCHERÆ. n. sp.

♀. Wings all golden bronze, blackish at their base, and with some golden scales in centre of anterior pair. Beneath they are golden yellow. Palpi pale yellow, terminal joint black. Head and thorax golden brown, collar pale yellow. Abdomen with second, fourth, sixth and seventh segments very broadly pale yellow, the intermediate segments sparsely covered with yellow hairs. Under side of abdomen blackish. Caudal tuft brownish black. Femora blackish. Tibiæ and tarsi alternately ringed with black and pale yellow.

♂. Smaller than the ♀, with the abdominal rings a little narrower.

Exp. wings, ♂ 13 m.m. ♀ 18 m.m.

6 ♂ 2 ♀. H. E. On flowers of *Heuchera rubescens* Torr. Lake Tahoe, Calif.

ZENODOXUS POTENTILLÆ. n. sp.

In this form the wings are wholly bronze brown, darker than in the preceding species, with a fiery red reflection, and beneath the basal two-thirds of wing is wholly fiery red. Antennæ dark yellow. Tibiæ and tarsi are fiery red, banded with black. The bands on the abdomen are a little darker yellow, but in other respects it resembles the previous species.

Exp. wings, 18 m.m.

1 ♂. 2 ♀. Lake Tahoe, Cal. San Rafael, Cal. (H. E.)  
With *Z. heucherae*.

Type. Coll. Hy. Edwards.

ZENODOXUS CANESCENS. n. sp.

The general color of this very curious species is heavy gray. The fore wings are quite opaque, ash grey, flecked with a few black scales. Hind wings vitreous in their central portion, narrowly opaque along costal and abdominal margins, ash grey. Under side of wings same as above, with a few black dashes in centre of primaries. Antennæ, palpi, thorax, abdomen and legs wholly ash grey, with a few black speckles irregularly placed.

Exp. wings, 21 m.m.

2 ♀. Colorado. (C. V. Riley.)

NORTH AMERICAN SPECIES OF *ÆGERIDÆ* DESCRIBED BY  
FRANCIS WALKER, F.L.S. EXTRACTED FROM CATAL.  
LEPID. HETEROCERA, B. MUSEUM. PT. 8.

"*ÆGERIA PLECIÆFORMIS*.

"*Male*. Black. Head with whitish hairs behind. Palpi pale yellow, somewhat shorter than those of *S. Æstriforme*. Antennæ bluish black, slightly pectinated. Thorax with a yellow stripe on each side. Hind borders of the abdominal segments yellow. Legs luteous; femora black; tibiæ with black stripes. Wings limpid. Fore wings purplish black along the costa and at the tips, and with the usual band of the same hue. Length of the body 5 lines, of the wings 10 lines.

"Nova Scotia. From Lieut. Redman's collection.

"*ÆGERIA PYRAMIDALIS*. *Barnston, M. S. S.*

"*Male*. Black. Head with yellow hairs about the eyes. Palpi yellow beneath; third joint elongate-conical, much less than half the length of the second. Antennæ rather stout, almost filiform, slightly pectinated, ferruginous beneath, very much longer than the thorax. Thorax with two yellow spots on each side, one at the base of the fore wing and one in front. Abdominal segments with yellow bands, which are broadest and most distinct beneath. Legs with whitish stripes. Wings limpid, with blackish cupreous ciliæ. Fore wings blackish cupreous along the costa and at the tips, and with a blackish cupreous band, which is slightly bordered with red; a red line along the hind border. Length of the body,  $5\frac{1}{2}$ –6 lines; of the wings, 9–10 lines.

"St. Martin's Falls, Albany River, Hudson's Bay. Dr. Barnston."

"*ÆGERIA ODYNERIPENNIS*.

"*Female*. Dark brown, slightly cupreous. Head whitish about the eyes. Palpi yellow, obliquely ascending, not long. Antennæ bluish black, simple, subfiliform, rather stout, very little longer than the thorax. Thorax with three yellow spots on each side. Abdomen with a yellow band on the hind border of each segment. Legs yellow; femora striped with brown. Wings limpid, with cupreous ciliæ. Fore wings cupreous along the costa and at the tips, and with the usual band of the same hue. Length of the body,  $5\frac{1}{2}$ – $6\frac{1}{2}$  lines; of the wings, 11–13 lines.

"Nova Scotia. 4 examp. E. Doubleday and Lieut. Redman."

"*ÆGERIA EMPHYTIFORMIS*.

"*Male*. Purplish black. Head with white hairs in front. Palpi thickly clothed beneath with rather long brown and tawny hairs. Antennæ ferruginous. Thorax with a yellow band in front and with a yellow spot at the base of each fore wing, and one at the tip of the scutellum. Abdomen with a yellow band on each segment; apical tuft black, with a few yellow hairs.

Legs red, partly yellow; femora black; tibiæ with black stripes. Wings purplish cupreous. Fore wings yellow and partly red in the disk, which is interrupted by the usual band. Hind wings slightly streaked with red, limpid toward the base. Length of the body, 5 lines; of the wings, 10 lines. *Female*. Head yellow in front and along the hind border. Palpi yellow, clothed beneath with reddish hairs. Antennæ red, blackish toward the tips. Apical tuft of the abdomen luteous, with a few black hairs on each side. Tibiæ wholly red. Fore wings with red disks. Hind wings mostly red along the borders.

"In this species and in *Æ. Odyneripennis* the antennæ of the male are more deeply pectinated than in the European species of the group *Bembecia*.

"United States. E. Doubleday."

"*ÆGERIA HYLOTOMIFORMIS*.

"*Female*. Dark ferruginous. Head with yellowish white hairs behind and in front, and about the eyes. Palpi pale yellow. Antennæ blackish at the tips. Thorax with a pale yellow tuft at the base of each wing. Abdomen with a testaceous band on each segment. Legs brown; fore coxæ testaceous beneath; tibiæ with a testaceous band; spurs and tarsi testaceous. Wings limpid, with purplish cupreous ciliæ. Fore wings with the borders and the usual band of the same hue. Hind wings with a purplish cupreous streak across the tip of the discal areolet, which character distinguishes this species from *Æ. Odyneriformis*. Length of the body, 6 lines; of the wings, 12 lines.

"Nova Scotia. Lieut. Redman."

"*ÆGERIA PYRALIDIFORMIS*.

"*Female*. Cupreous brown. Head with yellow hairs about the eyes. Palpi yellow, slender. Antennæ slender, subclavate, very much longer than the thorax. Pectus with a yellow stripe on each side. Abdomen with a yellow band at the middle of its length. Hind tibiæ mostly yellow; hind tarsi whitish. Fore wings cupreous brown, with a yellowish basal streak on the under side. Hind wings limpid, with cupreous brown ciliæ. Length of the body, 4 lines; of the wings, 8 lines.

"United States. E. Doubleday."

"*ÆGERIA SAPYGÆFORMIS*. (Group *Conopia*.)

"*Male*. Bluish black. Head with red hairs behind. Palpi red, black above toward the base. Antennæ serrated and pubescent beneath, very much shorter than those of the European *Conopiæ*. Abdomen with a slight red band at the base; segments from the fifth to the eighth red; apical tuft blue. Anterior tibiæ tawny; hind tibiæ with red tips; tarsi mostly testaceous. Wings with cupreous ciliæ. Fore wings blue, purple toward the tips, with a red discal streak, behind which there is a limpid streak. Hind wings limpid. Length of the body, 4 lines; of the wings, 8 lines.



"This species differs much from the typical form of *Conopia*, and somewhat approaches *Pyropteron*.

"United States. E. Doubleday."

"*ÆGERIA GELIFORMIS*.

"*Male*. Black. Head white on each side in front. Palpi almost bare; third joint lanceolate, rather less than half the length of the second. Antennæ bluish black, simple, ferruginous beneath and slightly thicker toward the tips, about twice the length of the thorax. Abdomen red, black at the base; apical tuft bluish black, red toward the base. Fore wings bluish black. Hind wings limpid, with blackish tips and hind borders. Length of the body, 3 lines; of the wings, 6 lines.

"United States. E. Doubleday."

*Note.* The species here inserted from Walker's descriptions will appear in the monograph in their proper position.